Case Reports

Asymptomatic struma ovarii: A case report

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Summary

Struma ovarii is a rare ovarian neoplasm. This tumor is generally benign, although malignant transformation has been reported. The preoperative diagnosis is generally difficult. Thyroid hormones may be produced and in a few cases asymptomatic women may develop definitive clinical hypothyroidism after resection of struma ovarii. We report a case of a 39-year-old woman who underwent laparoscopic resection of an asymptomatic right ovarian mass. The pathologic diagnosis was struma ovarii. The postoperative period was uneventful and her thyroid function remained normal.

Key words: Ovarian neoplasm; Struma ovarii; Laparoscopy.

Introduction

Struma ovarii is a highly specialized form of ovarian teratoma, in which thyroid tissue is the predominant element. In fact, the histological section of this tumor contains entirely or in part cysts filled with thyroid colloid [1].

Pure struma ovarii constitutes only 2% of all mature teratomas and malignant transformation has been reported in fewer than 5% of all strumas [2]. Despite the presence of thyroid tissue, no specific symptoms are present in the majority of cases; only 5% of patients with this tumor may produce hormones causing hyperthyroidism [3].

In rare cases the patients present ascites or pseudo Meigs' syndrome (constituted by ascites, hydrothorax and an elevated CA125 level).

Due to its rarity, there has been some controversy about diagnosis and treatment, and prognosis is difficult to evaluate.

We describe a case of benign struma ovarii only detected at histological section.

Case report

A 39-year-old woman, gravida 2, para 2, was admitted to our department for evaluation of a pelvic mass revealed by ultrasonography. It was not associated with pelvic pain or discomfort.

Family history was negative for breast and ovarian cancer. The patient reported regular monthly menstrual cycles.

Gynecological examination revealed a normal cervix, a mobile anteverted mildly enlarged uterus, a mobile, slightly irregular (on the surface) but not painful mass 7-8 cm in size in the right ovarian region. The left ovary was unremarkable. The cervical smear examination showed mild inflammation but no cytological atypia.

Abdominal and transvaginal ultrasounds revealed a complex cystic mass located in the right ovary, 85 x 62 x 65 mm in size, with fluid content and no evidence of excrescence (Figure 1). The uterus was mildly enlarged for a diffuse uterine fibromatosis. There was no free peritoneal fluid. The left ovary had a normal sonographic appearance.

Tumor markers were normal (beta HCG: 0.8 IU/l, CEA: 0.42 ng/ml; AFP: 0.69 ng/ml; CA125: 10.9 IU/ml; CA 19.9: 32.6 IU/ml).

The patient underwent laparoscopy. Under general anesthesia, a 10-mm laparoscope was inserted into the umbilicus and, under visual guidance, two 5-mm trocars and one 10- mm trocar were inserted in the lower abdominal area. Peritoneal washing was performed and the fluid was collected for cytological examination. The uterus and the left ovary were normal. A multicystic mass, 8 cm in size located in the right ovary, was found and excised intact. The tumor was removed from the abdominal cavity inside an endoscopic bag. At frozen section the cut surface showed a variegated appearance with a predominance of small cystic foci and was interpreted as a simple cyst.

The final histological examination revealed struma ovarii with benign thyroid tissue confined to the ovary (Figure 2).

The postoperative course was uneventful and the patient was discharged from the hospital two days after surgery. Thyroid function tests were within normal limits (FT3: 5 pg/ml; FT4: 16.7 pg/ml, TSH: 4.0 uIU/ ml, PRL: 5.5 ng/ml). At two-year follow-up the patient was well and her thyroid function normal.

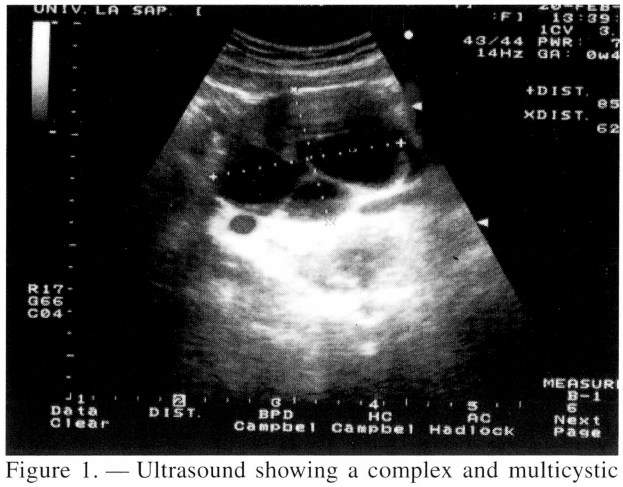

Figure 1. — Ultrasound showing a complex and multicystic mass of the right ovary (struma ovarii).

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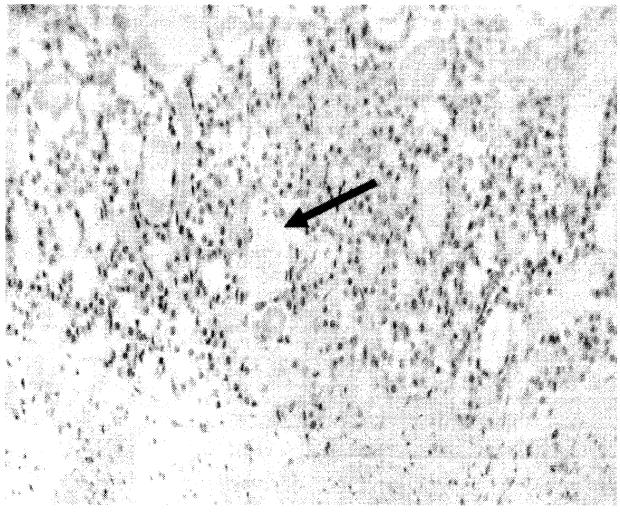

Figure 2. — Histologic specimen of thyroid tissue. The arrow highlights a thyroid follicle containing acellular colloid (hematoxylin and eosin).

Discussion

Struma ovarii is uncommon, constituting only 2% of ovarian teratomas. Less than 5% of struma ovarii tumors are malignant [2].

In a small number of cases it is associated with hyperthyroidism or more rarely symptoms which are the result of complications of ascites or hydrothorax (so-called pseudo Meigs'syndrome). Most patients are asymptomatic [4] as was our patient.

The preoperative diagnosis of struma ovarii is rarely made because of the lack of clinical and sonographic characteristics [5]. Struma ovarii usually has the appearance of a dermoid cyst with symptoms related to the size of the pelvic mass [3].The ultrasound features of struma ovarii are non-specific, but a heterogeneous, predominantly solid mass may be seen. Ultrasound demonstrates the complex appearance of the tumor. In some cases Doppler flow sonography reveals vascularized tissue in the central part of these solid lesions. This characteristic may highly suggest the presence of benign struma ovarii [6].

In a few cases magnetic resonance imaging findings may be more characteristic: the cystic space demonstrates both high and low signal intensity on T1- and T2-weighted images. The signal intensity of the cystic fluid is non-specific and variable depending on the contents of the colloid [2].

The high serum levels of tumor markers are not suggestive of benign struma. When this tumor is associated with pseudo-Meigs'syndrome, CA125 serum levels could be elevated [4].

Most benign tumors are diagnosed postoperatively and surgical excision remains as the definitive treatment. Besides being difficult to diagnose preoperatively, the intraoperative evaluation is also very difficult [1]. Carvalho *et al.* focused on the pathologic aspects of these lesions, resulting in confusion with other cystic ovarian tumors. They also discussed the limitations of frozen section in these tumors [7, 8].

In our case, ultrasound showed a complex ovarian mass without signs of malignancy, tumor markers were negative and also the frozen section was misleading. Only the final pathologic examination revealed the nature of the mass. However the intraoperatory evaluation did not influence the results of treatment since the lesion was benign and not functioning. Sometimes, in fact, an ovarian tumor can reinforce the ectopic thyroid function, and therefore patients can develop a clinical hypothyroidism after surgical resection of the mass [9]. In our case the eutopic thyroid function was normal.

References

[1] Ayhan A., Yanik F., Tuncer R., Tuncer Z.S., Ruacan S.: "Struma ovarii". *Int. J. Gynecol. Obstet.*, 1993, *42,* 143.

[2] Yamaschita Y., Hatanaka Y., Takahashi M., Miyazaki K., Okamura H.: "Struma ovarii". MR appearance. *Abdom. Imaging,* 1997, *22,* 100.

[3] Zalel Y., Seidman D.S., Oren M., Achiron R., Gotlieb W., Mashaiach S., Goldenberg M.: "Sonographic and clinical characteristics of struma ovarii". *J. Ultrasound Med.*, 2000, *19* 857.

[4] Huh J.J., Monts F.J., Bristow R.E.: "Struma ovarii associated with pseudo-Meigs' syndrome and elevated serum CA-125". *Gynecol. Oncol.,* 2002, *86,* 231.

[5] Volpi E., Ferrero A., Nasi P.G., Sismondi P.: "Malignant struma ovarii: a case report of laparoscopic management". *Gynecol. Oncol.,* 2003, *90,* 191.

[6] Zalel Y., Caspi B., Tepper R.: "Doppler flow characteristics of dermoid cysts: unique appearance of struma ovarii". *J. Ultrasound Med.,* 1997, *16,* 355.

[7] Bokhari A., Rosenfeld G. S., Cracchiolo B., Heller D.S.: "Cystic struma ovarii presenting with ascites and an elevated CA-125 level". *J. Reprod. Med.,* 2003, *48,* 52.

[8] Carvalho R.B., Cintra M.L., Matos P.S. *et al.*: "Cystic struma ovarii: A rare presentation of an infrequent tumor". *Sao Paulo Med. J.,* 2000, *118,* 17.

[9] Carvalho J.P., Carvalho F.M., Fairbanks Lima de Oliveira F., Yossie A., de Camargo R.: "Hypothyroidism following struma ovarii tumor resection: a case report". *Rev. Hosp. Clin. Fac. Med. S. Paulo,* 2002, *57,* 112.

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